



## TECHNICAL NOTE

U.S. DEPARTMENT OF THE INTERIOR – BUREAU OF LAND MANAGEMENT  
HAND LEVEL MONO POD

As a result of a suggestion submitted by John L. Hoeck of Bakersfield, the following information is presented:

"The use of the mono pod insures accurate hand level instrument height at every shot, steadies the instrument for quicker readings and permits longer shots. Accuracy remains constant on steep side slopes. The device can also be stuck in the ground and used as a range pole.

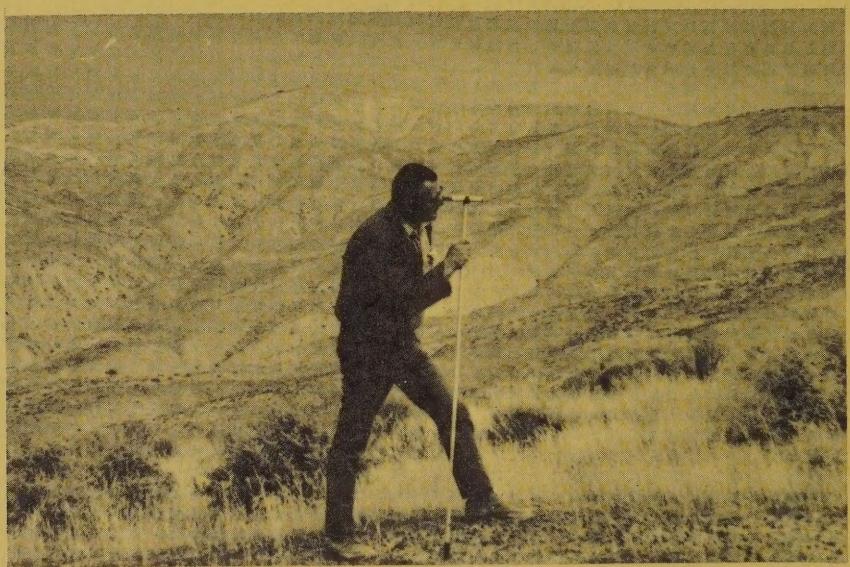
The following features in which the device could be helpful to BLM surveyors are listed below:

1. Provides accurate H.I. when using hand level.
2. Provides steadiness for longer shots and quicker reading.
3. Clamp device is quick moving on rod; also this permits moving level down several feet when H.I. is over top of target rod.
4. Circular grooves in the rod at 1 foot intervals permit accurate adjustment of the clamp device for purpose mentioned in Feature #3.
5. Circular flange at lower end, determines constant height. Prevents rod from falling easily and permits forcing into hard ground by placing foot on either side.
6. Point permits rod to be self supporting when used as a range pole. Easy to use and carry, actually is a walking stick and support when used in steep terrain.

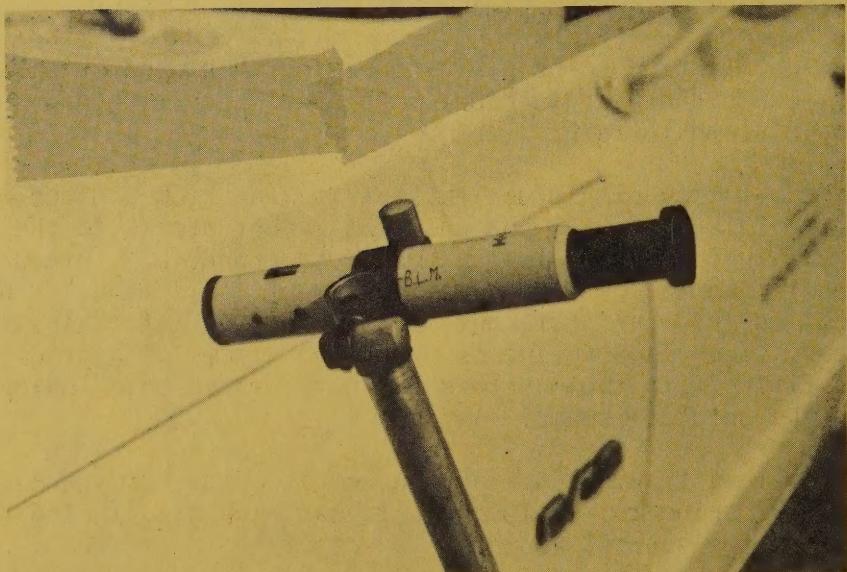
The device is a fairly simple design. It is made from a piece of EMT thin wall conduit, 5' 1" long with nut and flat washer brazed to the lower end. (Nut is on the inside of tube). The points have 3/8" USS thread and screws through washer into the nut. Suggest points of 2 1/2" and 4" in length for hard and soft soils. The increment marks at 1 foot intervals are made with a tube cutter. The clamp device is made from slices of appropriate size tubing, and fitted with thumb screws and nuts brazed on. Tubing is split so it will take up under clamp.

Entire cost is less than \$3.00. The device is quite handy and should be a part of every Engineers' equipment. It has been used in the Bakersfield District Office for several months."

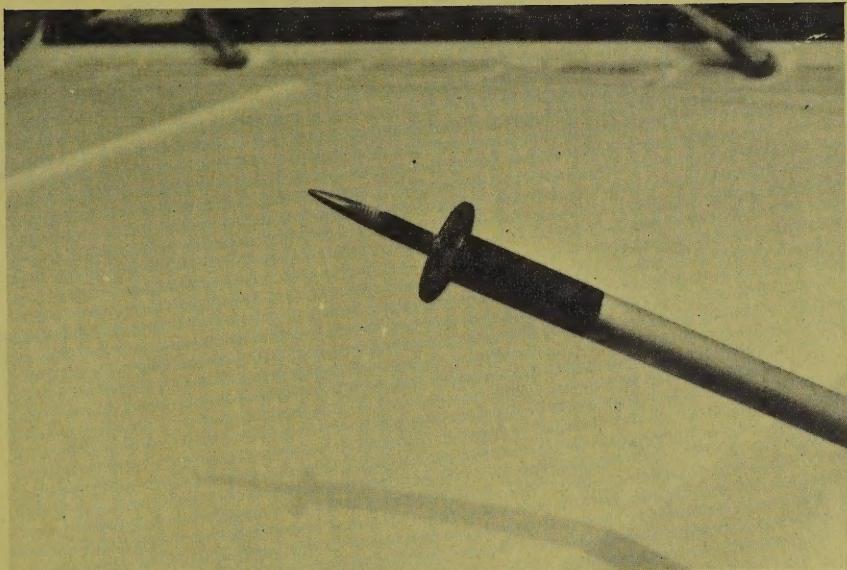
Below are photographs of actual use of mono pod.



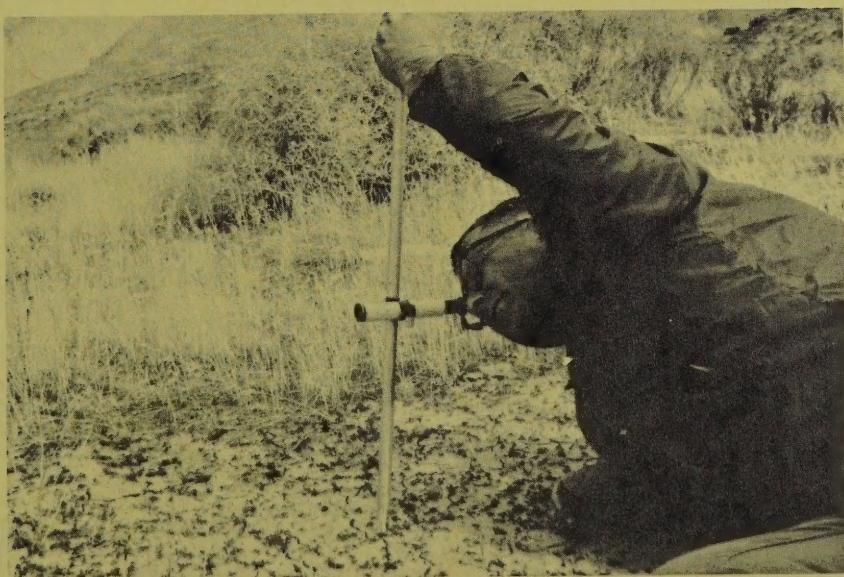
General view of instrument in use



Clamp Fixture



Point at bottom



Clamp moved down, when normal position exceeds target height.

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